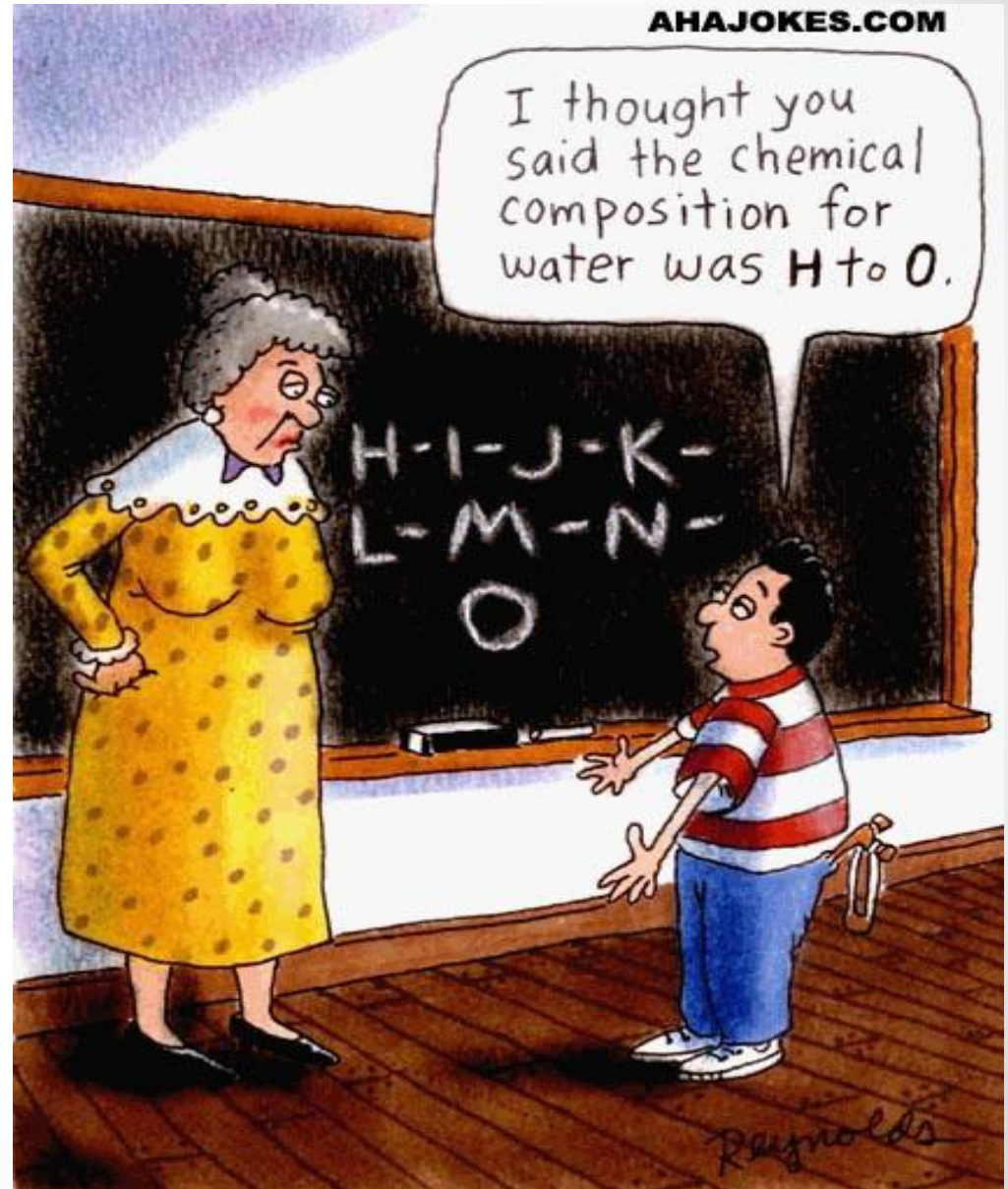


SL/HL 1 - Chemistry



SL/HL 1 - Chemistry

Instructor : Mr. Martin Brakke

Email : martinb@eca.com.ve

Web: BrakkelBchem1.wikispaces.com

Copy this web address and set a bookmark on your web browser. You will be using this site all year



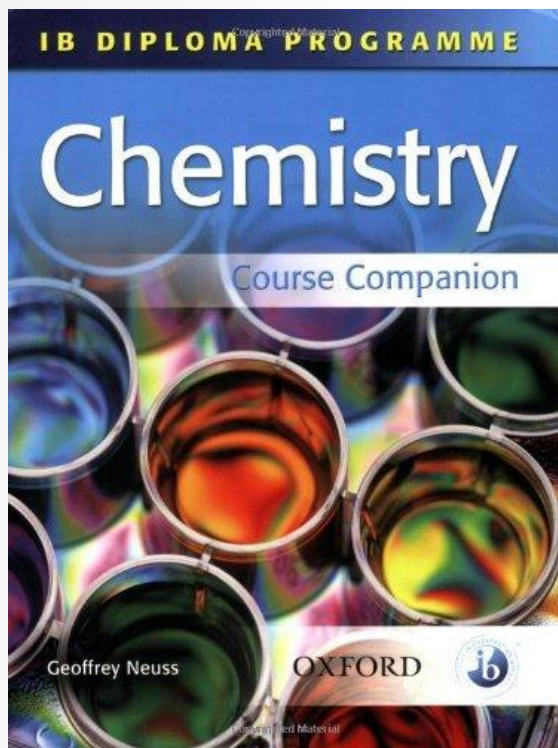
IB Chemistry Agenda

Blocks 5 & 7

- Brief overview of the course
- Access to information on the internet
- Class Policies
- Safety contracts
- Chemical Hazards
- Scientific Methods
- Assignments

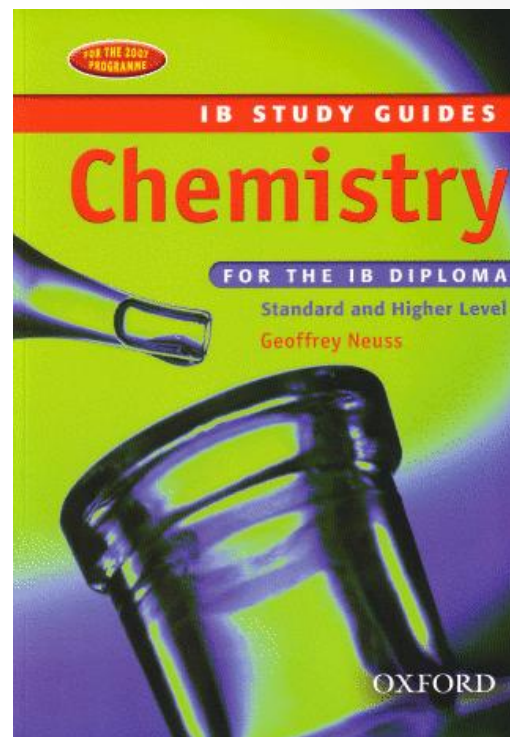


Textbooks



Your Primary
Textbook

(may be left at home)



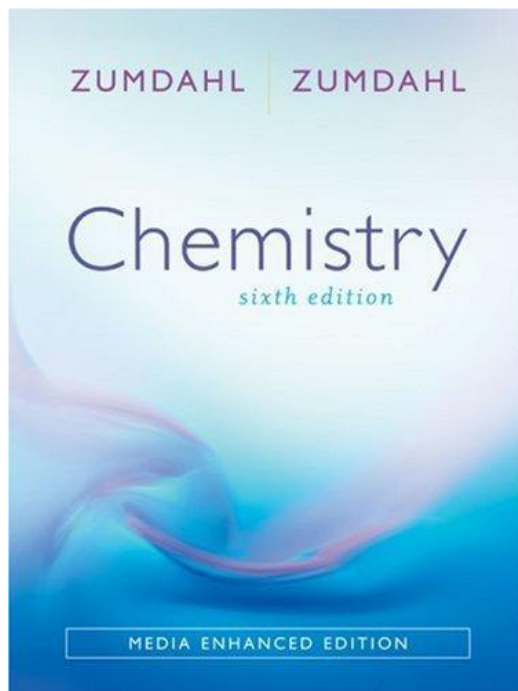
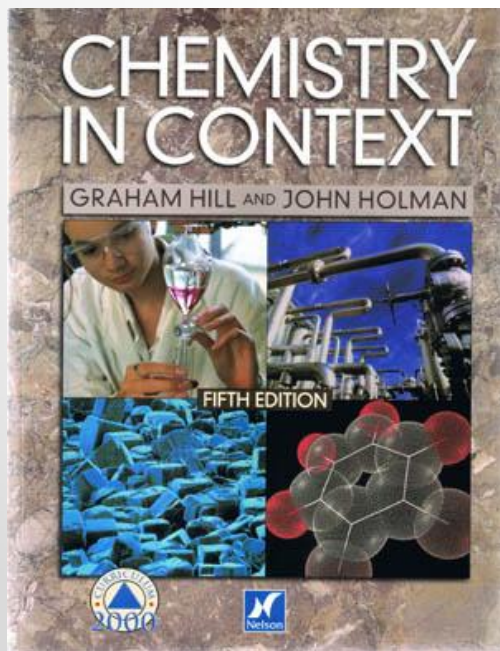
Review and
Reference

(may be left at home)



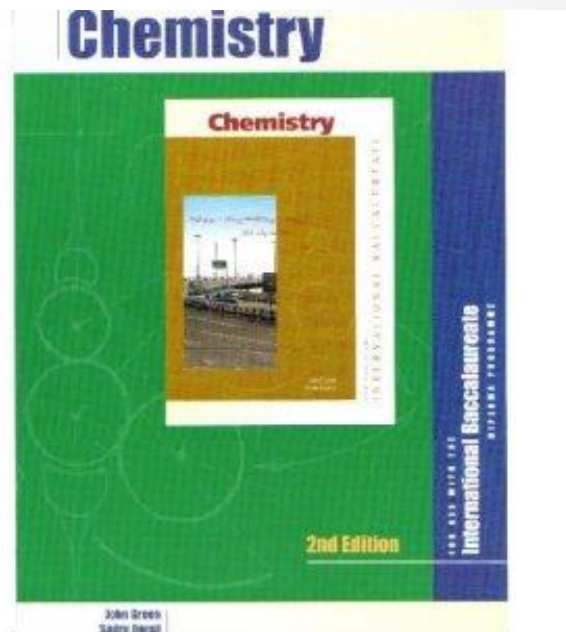
Supplementary Texts (if needed)

Source text, not same sequence as IB (borrow upon request)



Printed prior to IB revision, includes minor changes to sequence (borrow upon request)

For use with AP and Gen Chem, not same sequence as IB (borrow upon request)



IB SL/HL 1 - Assignments

- Due Thurs 8/19: (T1– D01):
 - Return Classroom Syllabus
 - Read P. 6-10 in the *Course Companion*
- Due Mon 8/23: (T1-D02)
 - Read P. 10-13 in the *Course Companion*



Topic 1: Quantitative chemistry (12.5 hrs)

1.1 The mole concept and Avogadro's Constant – 2 hrs

1.2 Formulas - 3 hrs

1.3 Chemical Equations – 1 hr

1.4 Mass and gaseous volume rel. in chemical reactions - 4.5 hours

1.5 Solutions - 2 hours



Enter Stoichiometry!

1.1 The mole concept and Avogadro's constant - 2 hours

- 1.1.1 Apply the mole concept to substances (2)
- 1.1.2 Determine the number of particles and the amount of substance (in moles).(3)



Formulas

1.2 Formulas - 3 hours

- 1.2.1 Define the terms relative atomic mass (A_r) and relative molecular mass (M_r). (1)
- 1.2.2 Calculate the mass of one mole of a species from its formula. (2)
- 1.2.3 Solve problems involving the relationship between the amount of substance in moles, mass and molar mass. (3)
- 1.2.4 Distinguish between the terms empirical formula and molecular formula. (2)
- 1.2.5 Determine the empirical formula from the percentage composition or from other experimental data. (3)
- 1.2.6 Determine the molecular formula when given both the empirical formula and experimental data. (3)



Chemical Equations

- **1.3 Chemical equations - 1 hour**
 - 1.3.1 Deduce chemical equations when all reactants and products are given. (3)
 - 1.3.2 Identify the mole ratio of any two species in a chemical equation. (2)
 - 1.3.3 Apply the state symbols (s), (l), (g) and (aq). (2)



Gas Relationships

1.4 Mass and gaseous volume relationships in chemical reactions - 4.5 hours

- 1.4.1 Calculate theoretical yields from chemical equations. (2)
- 1.4.2 Determine the limiting reactant and the reactant in excess when quantities of reacting substances are given. (3)
- 1.4.3 Solve problems involving theoretical, experimental and percentage yield. (3)
- 1.4.4 Apply Avogadro's law to calculate reacting volumes of gases. (2)
- 1.4.5 Apply the concept of molar volume at standard temperature and pressure in calculations. (2)
- 1.4.6 Solve problems involving the relationship between temperature, pressure and volume for a fixed mass of an ideal gas. (3)
- 1.4.7 Solve problems using the ideal gas equation, $PV = nRT$ (3)
- 1.4.8 Analyse graphs relating to the ideal gas equation. (3)



Solutions

- **1.5 Solutions - 2 hours**
 - 1.5.1 Distinguish between the terms solute, solvent, solution and concentration (g dm^{-3} and mol dm^{-3}). (2)
 - 1.5.2 Solve problems involving concentration, amount of solute and volume of solution. (3)



Introduction to Chemistry

Chemistry

- The study of matter and its relationships
- The study of materials and how they interact
- The Central Science



Chemistry Topics Include

Atomic Theory

Periodic Table

Bonding

**Formulas and
Stoichiometry**

States of matter

**Calorimetry /
Thermodynamics**

Solutions

Kinetics

Equilibrium

Acids and Bases

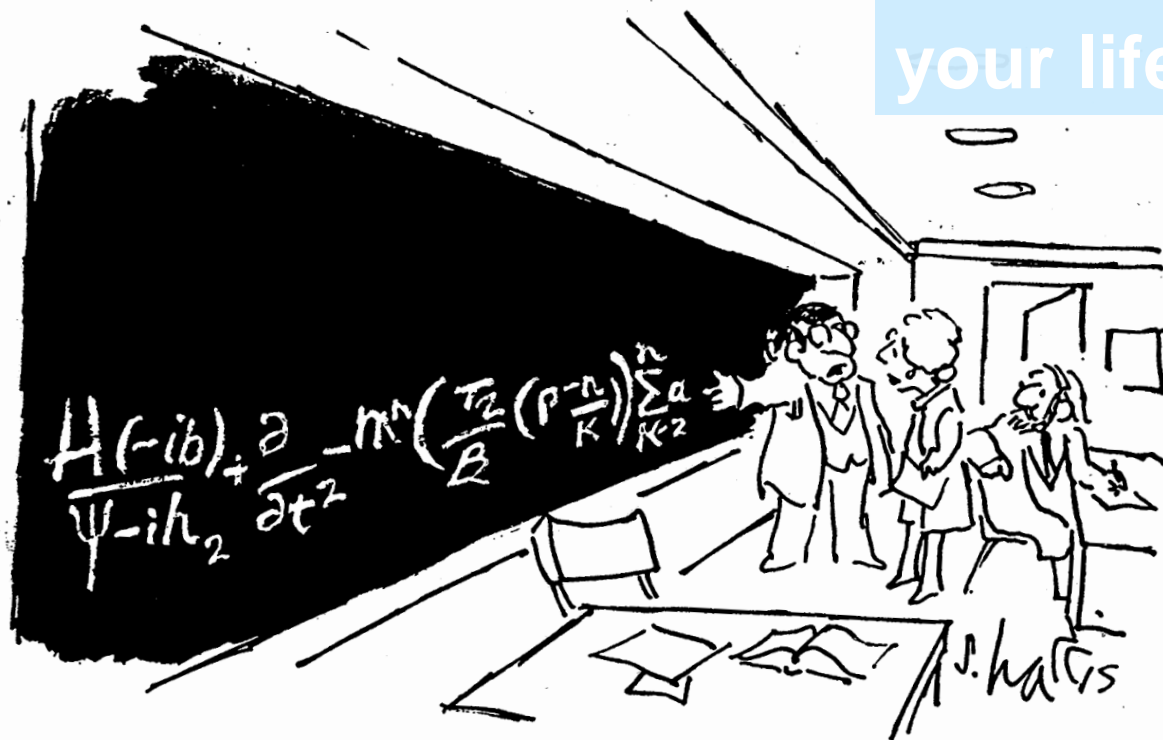
Oxidation

Reduction

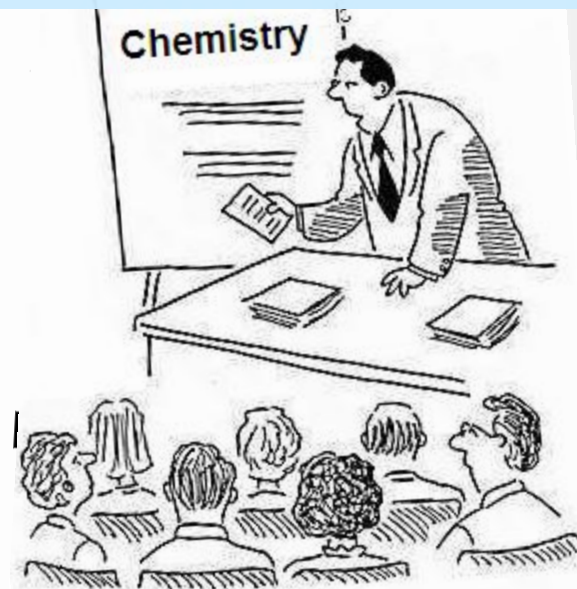


Is Chemistry Hard??

Maybe! --- but you will develop skills that are valuable for the rest of your life!



"But this is the simplified version for the general public."



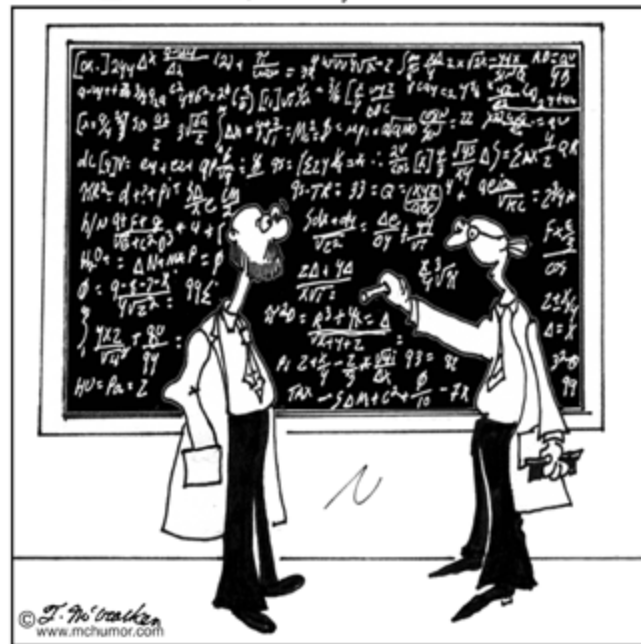
"Before I answer your question, let me briefly review my list of strategies for dealing with difficult people."

Is Chemistry Hard??

Well maybe but you will develop skills that are valuable for the rest of your life
These include:

Abstract Thinking
Critical Thinking
Analysis
Logic
Math Skills

McHUMOR.com by T. McCracken



"There's really no need for confusion.
Part 95 of section 33 of article Q
in the formula quite clearly states ..."



Is Chemistry Hard??

**Well maybe but you will develop skills that are valuable for the rest of your life
These include:**

**Abstract Thinking
Critical Thinking
Analysis
Logic
Math Skills**

**Problem Solving
Communication
Time Management
Hazards Management**

